

WEST Search History

DATE: Monday, October 27, 2003

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side			result set
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
L8	l4 and amines	2	L8
L7	l4 and ?amines	0	L7
L6	L3 and (dilution factor)	0	L6
L5	((134/\$)!.CCLS.) and L4	2	L5
L4	L3 and dilution	12	L4
L3	L2 and (beverages or food)	118	L3
L2	L1 and ((filling line) or (filling facilities))	334	L2
L1	lubricating or cleaning or disinfecting	715903	L1

END OF SEARCH HISTORY

WEST**End of Result Set**

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L8: Entry 2 of 2

File: PGPB

Aug 22, 2002

DOCUMENT-IDENTIFIER: US 20020115573 A1

TITLE: Lubricants formulated and qualified for contact with food compositions and related business methodsAbstract Paragraph (1):

A food container conveyor device having improved lubricant properties can be lubricated using a lubricant composition that can become ingested by a user from a food or a container for the food, can come into incidental contact or direct contact with a food composition, can be incorporated at measurable concentrations into the food, or can be used generally on food conveyor surfaces wherein the food is exposed to the lubricant. Such lubricant compositions can be formulated in aqueous or non-aqueous compositions containing approved lubricant ingredients. Food containers lubricated using the compositions of the invention can be distributed to the public even in the substantial occurrence of contact between the food composition and the approved lubricant materials.

Summary of Invention Paragraph (2):

[0001] This invention relates lubricants for food packaging, packaging business methods and to food containers and lubricated conveyor apparatus that can move the container or container plus food composition during production. Such conveyors typically move the containers to stations that incorporate the food composition into the container and then further direct the container or food and container to stations that can clean the container, apply labels or package the container for further shipment.

Summary of Invention Paragraph (4):

[0002] In commercial container filling or packaging operations, containers and packaged foods are moved by a conveying system at high rates of speed. In current operations, copious amounts of aqueous dilute lubricant solutions are typically applied to the conveyor or containers using spray or pumping equipment. The lubricants are directed to the conveyor or container using a variety of methods. Spray, brush, fountain, drip, flooding or other means can be used to apply the liquid under some pressure to the conveyor or container. Such means to apply the liquid lubricant can create a splash, stream, mist or other directed liquid mass that can contact the food in a container or remain on the container and result in a concentration of lubricant in the food. Consumption of the food or contact with the container can result in the ingestion of the lubricant residue from the food or container. These lubricant solutions permit high-speed operation (up to 1000 containers per minute or more) of the conveyor. Aqueous conveyor lubricants conventionally based on fatty acids, anionic surfactants, ethoxylated amines or fatty amines are not currently qualified for contact or indirect contact with food. Any contact between food and lubricant can render the food unfit for human consumption under current FDA regulations including for example 21 CFR .sectn..sectn.1.172, 1.178 and 1.182. These regulations also define "food grade" additive materials. Further, such lubricants typically contain ingredients that can promote microbes or can react with spilled carbonated beverages or other food or liquid components to form unwanted solid deposits.

Summary of Invention Paragraph (5):

[0003] Certain aqueous conveyor lubricants are formulated for thermoplastic beverage containers made of polyethylene terephthalate (PET) and other thermoplastics. Dilute aqueous lubricants typically require use of large amounts of water on the conveying line, which must then be disposed of or recycled, and which causes an unduly wet environment near the conveyor line. Current conveyor lubricant systems are classified H-2 according to regulations in 21 CFR .sectn..sectn.1.172, 1.178 and 1.182. Such systems are not approved for incidental, indirect or direct contact with beverage compositions.

Any contact between H-2 lubricant materials and foods that incorporates any important amount of lubricant into beverage renders the beverage unsuitable for human consumption. Significant problems have arisen when H-2 lubricants have come into contact with food materials. When the food materials, often beverages or other comestibles have been contaminated with such H-2 lubricants, recalls of these materials have occurred resulting in substantial loss to the manufacturer. Because of the safety concerns and the potential of financial lawsuit to manufacturers, the use of H-2 lubricants can often pose substantial operating costs and administrative costs including regulatory review personnel insurance and other costs not directly related to the costs of lubricating conveyor lines and the costs of maintaining food purity. Accordingly, a substantial need exists in the art to obtain lubricants that can be used in a way on lubricating lines and with respect to containers and containers containing food such that the food can come into incidental, indirect or direct contact with lubricating compositions without rendering the food unfit for human consumption.

Summary of Invention Paragraph (6):

[0004] Initially such conveyor systems were lubricated using large amounts of dilute aqueous lubricant materials. Typical early conveyor lubricants comprise substantially soluble sodium salt of the fatty acid or sodium salt of linear alkane sulfonate which acted to both lubricate and at least to some degree, clean the conveyor surfaces. Representative examples of such lubricants are found in Stanton et al., U.S. Pat. No. 4,274,973 and Stanton, U.S. Pat. No. 4,604,220. These materials are considered to be H-2 and are not approved for contact with foods. A series of soluble aqueous lubricants were introduced including Rossio et al., U.S. Pat. Nos. 4,929,375 and 5,073,280; and Wieder et al., U.S. Pat. No. 5,009,801. These patents assert that certain substituted aromatic compounds, certain couplers and saponifying agents and certain amine compounds can obtain lubrication in appropriately formulated materials. Other patents, including Person Hei et al., U.S. Pat. Nos. 5,863,874 and 5,723,418; Besse et al., U.S. Pat. No. 5,863,871; Gutzmann et al., U.S. Pat. Nos. 5,559,087 and 5,352,376; Liu et al., U.S. Pat. No. 5,244,589; Schmitt et al., U.S. Pat. No. 5,182,035; Gutzmann et al., U.S. Pat. No. 5,174,914; teach conveyor lubricants that provide adequate lubrication, cleaning and with minimal chemical attack to PET bottles. Certain lubricating oil compositions for use with high temperature resistant food compatible food processing machinery are shown in Butler et al., U.S. Pat. No. 6,087,308. Lawate et al., U.S. Pat. No. 5,538,654, discloses environmentally friendly foodgrade lubricants. Lastly, Nilbert, U.S. Pat. No. 4,062,785, shows non-aqueous lubricant compositions used in food handling machinery comprising a white oil. Other lubricants are used as shackle or trolley lubricants in meatpacking. Other lubricants available for use in food applications include can seamer grease typically used to form seams in aluminum cans. Such materials do not come into contact with the container conveyor interface area. No currently available lubricant is considered to be H-1 qualified for lubricating food or beverage container conveyor contact area.

Summary of Invention Paragraph (7):

[0005] A substantial need exists for improved lubricating methods commonly used in the food or beverage industry. Lubricating solutions are often used on conveying systems during the filling of containers with foods or beverages. There are a number of different requirements that are desirable for such lubricants. For example, the lubricant should provide an acceptable level of lubricity for the system. The lubricant preferably has a viscosity which allows it to be applied by conventional pumping and/or application apparatus, such as by spraying, roll coating, wet bed coating, and the like, commonly used in the industry. More importantly the lubricant should be made of materials that are H-1 approved and can be contacted with the food or considered to be a food additive and not result in the food being rejected as not fit for human consumption.

Summary of Invention Paragraph (9):

[0006] We have found that substantial savings can occur in the packaging of food materials in containers using H-1 qualified lubricants on conveyors that move the container from place to place during the packaging procedure. The use of an H-1 grade lubricant in such a conveyor system can alleviate many concerns with respect to contacting the food material with the lubricant material. Should some amount of the lubricant come into direct, incidental or indirect contact with the food, the presence of the H-1 lubricant in the food does not render the food unsuitable for human consumption. "Food" as used in this application means any substance ingested by humans including liquid, solid, semi-solid, composite comestible materials in the form of water, carbonated beverage, a food, juice, sports beverage, snack, edible container or carrier. Such a process can result in substantial savings in the operation of the food manufacturing and packaging operation and can also result in substantial savings of

money in general administrative and operating expenses by reducing costs of recall of contaminated materials (in contact with H-2 lubricants) and in reduced administrative costs such as reduced insurance costs. U.S.D.A. H-1 lubricants are regulated in 21 C.F.R. .sctn.178 (at 178.3570), 21 C.F.R. .sctn.1.72 and 21 C.F.R. .sctn.1.82. The materials are formulated to contain ingredients that both lubricate and pass the stringent guidelines of the Federal regulations. Current conveyor lubricants are all classified as "H-2" and can be used only in packaging procedures and conveyor systems in a method that envisions absolutely no possibility of direct, indirect or incidental contact with comestible food materials. For the purposes of this application the terms "Direct, Incidental or Indirect" contact between lubricant and food means that the food acquires an amount of lubricant. This amount if in the form of an H-2 composition would render the food unfit for human consumption. For the purpose of this specification and claims, the term "coating" is intended to mean a continuous or discontinuous thin liquid layer of the lubricant dispersions of the invention on a moving conveyor surface. Such a coating can be formed by applying the liquid to the surface such that the surface of the conveyor is substantially completely covered with the lubricant. Alternatively, the term "coating" can also connote the timed application of the lubricant such that the lubricant can be applied intermittently to a surface of a moving conveyor. The intermittent application of the lubricant can still provide an adequate lubricating layer on the surface. The lubricant coatings of the invention can develop areas of the conveyor that do not have any substantial quantity of liquid lubricant as the lubricant interacts with the conveyor surface, the containers and the changing conditions as the conveyor moves through the structure. For the lubricant to work successfully, there must be an amount of lubricant at the container conveyor interface to obtain reduced coefficient of friction. In other words, a successful lubricant coating is present when the lubricant is present at the interface to successfully reduce friction during conveying of a container from place to place on a conveyor.

Summary of Invention Paragraph (10):

[0007] With ongoing advances in packaging processes, the dynamics of a conveyor lubricant has been altered in important aspects. First, filling, capping, seaming or other processing conveyor speeds have been increased from about a few hundred packages per minute to over one thousand packages per minute for a number of containers and in particular, for polyethylene terephthalate carbonated beverage containers. In filling steel and aluminum cans, filling rates of 2000 packages per minute can occur. With this increased speed, there is an increase potential for lubricant coming into direct, indirect or incidental contact with the beverage or food material by splashing, spraying or contact with air borne aerosol lubricant into open containers prior to capping, sealing or seaming. Second, automation has reduced the need for worker presence in filling lines. As a consequence, with minimal oversight or trouble shooting during production, often packages having some direct or incidental contact between lubricant and food could go unnoticed for some period of time. Further, in addition to changes in filling operations, the number of products and the number of different types of package sizes has changed dramatically. While one gallon and two liter packages continue to be very popular, single serve packages have obtained a growing importance in all product food segments. As a result, single serve packages result in direct contact between the consumer and the container during consumption of the contents of the container. Any chemical residue present on the exterior of a container such as a polyester bottle, beverage aluminum can, polyethylene sandwich container, or other material can easily result in an ingestion of lubricant residue from the exterior of the container during food consumption.

Summary of Invention Paragraph (11):

[0008] The inadvertent adulteration of food products by direct or incidental contact with lubricants has become a major concern with beverage manufacturers due to the risk of liability and the potential for damage to brand name image. Such concerns are exemplified by the occurrence of contaminated beverage recalls. The H-1 lubricants contemplated in the methods of the invention are typically liquid materials that contain a solution dispersion, emulsion or microemulsion of a lubricant material in a liquid phase. Liquid phases contemplated by the methods of this invention are typically manufactured by dispersing lubricant material in an aqueous phase or an oleophilic phase. Aqueous phases contemplated in the methods of the invention are typically derived from deionized water or other purified water sources that qualify as an H-1 material. Such aqueous phases can contain a solution of useful materials that can be identified by a review of 21 C.F.R. .sctn.172, 178 or 182. The oleophilic phase of the lubricants contemplated in this invention are typically oleophilic materials such as qualified mineral oils, qualified oils from natural sources such as corn oil, palm oil, cottonseed oil, etc. Such oils, waxes and other oleophilic materials are listed in

the appropriate sections of H-1 approved materials in 21 C.F.R. .sctn..sctn.172, 178 and 182.

Summary of Invention Paragraph (12):

[0009] A first aspect of the invention comprises a lubricant formulated using an aqueous carrier using concentrations of materials that are designed or adapted for direct application to the conveyor container contact surface without further dilution with an aqueous stream. A second aspect of the invention comprises a lubricant comprising an aqueous carrier and a concentration of active materials that are designed or adapted for dilution with water to form a dilute lubricant material. In this aspect, the lubricants are typically formulated for dilution with from about 100 to about 500 parts of aqueous diluent per each 1 part of the formulated lubricant material. A further aspect of the invention comprises a lubricant having a formulation dispersed in an oleophilic carrier which can be applied directly to the interface between a container and a conveyor surface for lubricating purposes. Such a lubricant oleophilic formulation can be applied neat (without dilution). Still another aspect of the invention comprises a lubricant comprising an oleophilic carrier in a concentration of active materials that are designed and adapted for dilution with a diluent which can comprise an oleophilic liquid or a hydrophilic liquid such as water for application purposes.

Summary of Invention Paragraph (13):

[0010] In another aspect of the invention, the methods of the invention can be used to convey a number of different types of containers or packages. Such containers include cans, bottles or cartons and boxes. Cans typically include both steel and aluminum cans that are typically conveyed with an open top filled with a food product such as stew, soup, beverage or other dried, aqueous or composite food product. Bottles include glass or thermoplastic bottles including polyethylene terephthalate, polycarbonate, polyethylene, polypropylene or other common resin materials. Lastly, cartons or boxes can include materials made from cellulosic webs that can be used in a corrugated form, a sheet-like form, or a coated material in which the coatings comprises a wax, a resin or other printed or non-printed materials.

Summary of Invention Paragraph (20):

[0014] Albumin macro aggregates; Aluminum caprylate; Aluminum stearate; Arabinogalactan Calcium stearate; Caprylic/capric acid; Carboxymethylcellulose sodium; Carboxymethyl cellulose; Carrageenan; Cellulose; Dextrin; Food starch modified; Gluconolactone; Hydrogenated stearic acid; Hydrogenated vegetable oil; Magnesium stearate; Methoxyethanol; Methylcellulose; Microcrystalline cellulose; Mineral oil; Nonoyol-7; Oleic acid; Pea protein concentrate; various liquid and thickened solid polyethylene glycol compositions PEG-4; PEG-6; PEG-8; PEG-9; PEG-12; PEG-14; PEG-16; PEG-24; PEG-32; PEG-40; PEG-75; PEG-100; PEG-150; PEG-200; Polyethylene glycol; Potassium oleate; Potassium polymetaphosphate; Potassium stearate; Potassium tripolyphosphate; Rennet Sodium cassinate; Sodium hexametaphosphate; Sodium laurate; Sodium metaphosphosphate; Sodium myristate; Sodium oleate; Sodium palmitate; Sodium stearate; Soy acid; Soy protein; Tallow acid; Trimyriatin; Whey, dry; Whey protein conc; Whey, reduced lactose; Whey, reduced minerals; Zanthan gum.

Detail Description Paragraph (5):

[0029] The determination of lubricity (Coefficient of friction (COF) of the lubricant was measured on a short track conveyor system. The conveyor was equipped with two belts from Rexnord. The belt was Rexnord LF (polyacetal) thermoplastic belt of 3.25" width and 20 ft long. The lubricant was applied to the dry conveyor surface evenly with a bottle wash brush. The conveyor system was run at a speed of 100 ft/min. Six 2 L bottles filled with beverage were stacked in a rack on the track with a total weight of 16.15 kg. The rack was connected to a strain gauge by a wire. As the belts moved, force was exerted on the strain gauge by the pulling action of the rack on the wire. A computer recorded the pull strength.

CLAIMS:

1. A method of lubricating a surface at the interface between a container and a moving conveyor, the method comprising: (a) forming a continuous thin coating of a liquid lubricant composition on a container contact surface of a conveyor; and (b) moving a container, the container adapted for a food composition, on the container contact surface in order to transport the container from a first location to a second location; wherein during the method of lubricating, the food composition, coming in direct, incidental or indirect contact with the lubricant, obtains a measurable concentration of the lubricant composition but remains fit for human consumption.

2. The method of claim 1 wherein the food comprises a liquid food in an open bottle.
3. The method of claim 1 wherein the food comprises a liquid food in an open can.
5. The method of claim 1 wherein the food comprises a solid food in an open can.
6. The method of claim 1 wherein the food comprises a complex food composition having an aqueous phase and a solid phase in an open carton.
7. The method of claim 5 wherein the food is in the form of a frozen food in an open carton.
21. A business method of food packaging, the method comprises lubricating a surface at the interface between a container and a moving conveyor, the business method comprising steps of: (a) forming a continuous thin film of a liquid lubricant composition on a container contact surface of a conveyor; and (b) moving a container, the container having a food composition, on the container contact surface in order to transport the container from a first location to a second location wherein during the method of lubricating, the food composition in direct, incidental or indirect contact with the lubricant, obtains a measurable concentration of the lubricant composition but remains fit for human consumption; and wherein the use of food grade materials in the lubricant reduces business risk, cost of product replacement or insurance cost.
22. The method of claim 21 wherein the food comprises a liquid food in a bottle.
27. The method of claim 21 wherein the food comprises a beverage in a can.
28. The method of claim 21 wherein the food comprises a complex food composition having an aqueous phase and a solid phase in an open carton.
29. The method of claim 27 wherein the solid food is in the form of a frozen food in an open carton.
41. The method of claim 1 or 21 wherein a residue of the lubricant remains in the food or on the container such that the residue can be ingested by a consumer.
44. A business method of food packaging, the method comprises lubricating a surface at the interface between a container and a moving conveyor, the business method comprising steps of: (a) forming a continuous thin film of a liquid lubricant composition on a container contact surface of a conveyor; and (b) moving a container, the container adapted for a food composition, on the container contact surface in order to transport the container from a first location to a second location wherein during the method of lubricating, the container in direct, incidental or indirect contact with the lubricant, obtains a measurable concentration of the lubricant composition but the container remains suitable for use in conjunction with human consumption; and wherein the use of food grade materials in the lubricant reduces business risk, cost of product replacement or insurance cost.

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 12 returned.**☐ 1. Document ID: US 20030199414 A1

L4: Entry 1 of 12

File: PGPB

Oct 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030199414
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030199414 A1

TITLE: Pouched cleaning compositions

PUBLICATION-DATE: October 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE COUNTRY RULE-47
Boutique, Jean-Pol	Gembloux	BE
Burckett-Saint-Laurent, James Charles Theophile Roger	Brussel	BE
Coosemans, Steven Jozef Louis	Kampenhout	BE
Goovaerts, Luc	Haacht	BE
Gualco, Lorenzo Matteo Pierre	Brussels	BE
Johnston, James Pyott	Merchtem	BE

US-CL-CURRENT: 510/293; 510/295, 510/296, 510/297

ABSTRACT:

The present invention relates to a pouched cleaning composition wherein the pouch is constructed from a water-soluble film and contains a liquid composition comprising less than 5% by weight of the liquid composition, of water; an anionic surfactant; and at least 0.5% by weight of the liquid composition of a builder/chelant free of C8-22 alkyl or alkenyl chains characterized by a solubility in said liquid composition of less than 0.3% by weight. Such pouched cleaning compositions provide better cleaning performance and better pouch solubility while avoiding the formation of residues.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Desc	Image
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☐ 2. Document ID: US 20030086820 A1

L4: Entry 2 of 12

File: PGPB

May 8, 2003

PGPUB-DOCUMENT-NUMBER: 20030086820
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030086820 A1

TITLE: Decontamination of surfaces contaminated with prion-infected material with gaseous oxidizing agents

PUBLICATION-DATE: May 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
McDonnell, Gerald E.	Chardon	OH	US	
Antloga, Kathleen M.	Chardon	OH	US	
Kaiser, Herbert J.	Poontoon Beach	IL	US	

US-CL-CURRENT: 422/28

ABSTRACT:

A surface which carries a material which is infected with prions is cleaned with an alkaline cleaning solution to remove as much proteinaceous material as possible from the surface. The solution contains an alkaline cleaning agent which attacks prions remaining on the surface and which attacks prions removed from the surface during the cleaning step. After the cleaning step, the surface is exposed to a strong gaseous oxidant, preferably hydrogen peroxide vapor. The hydrogen peroxide or other strong oxidant attacks the prions, particularly the unclumped prion strands, deactivating the prions.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMC	Draw Desc	Image
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☐ 3. Document ID: US 20020115573 A1

L4: Entry 3 of 12

File: PGPB

Aug 22, 2002

PGPUB-DOCUMENT-NUMBER: 20020115573

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020115573 A1

TITLE: Lubricants formulated and qualified for contact with food compositions and related business methods

PUBLICATION-DATE: August 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hei, Kim Person	Baldwin	WI	US	
Li, Minyu	Oakdale	MN	US	
Hauptert, Amy	St. Paul	MN	US	
Lokkesmoe, Keith D.	Savage	MN	US	

US-CL-CURRENT: 508/202; 508/459, 508/463, 508/539, 508/575, 508/579

ABSTRACT:

A food container conveyor device having improved lubricant properties can be lubricated using a lubricant composition that can become ingested by a user from a food or a container for the food, can come into incidental contact or direct contact with a food composition, can be incorporated at measurable concentrations into the food, or can be used generally on food conveyor surfaces wherein the food is exposed to the lubricant. Such lubricant compositions can be formulated in aqueous or non-aqueous compositions containing approved lubricant ingredients. Food containers lubricated using the compositions of the invention can be distributed to the public even in the substantial occurrence of contact between the food composition and the approved lubricant materials.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMC	Draw Desc	Image
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☐ 4. Document ID: US 6364105 B1

L4: Entry 4 of 12

File: USPT

Apr 2, 2002

US-PAT-NO: 6364105

DOCUMENT-IDENTIFIER: US 6364105 B1

TITLE: System for dispensing premeasured quantities of concentrated materials

DATE-ISSUED: April 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yacko; R. Bruce	Toledo	OH		
Gayer; Jeffrey C.	Sylvania	OH		
Mueller; Edward L.	Toledo	OH		
Wiegand; John A.	Sylvania	OH		

US-CL-CURRENT: 206/222; 206/219, 206/568

ABSTRACT:

A liquid dispensing bag has a sealed concentrate pouch and a mixing pouch, the concentrate pouch having a fluid tight seal separating the concentrate pouch from the mixing pouch, and the concentrate pouch containing a base material at a first concentration. Upon the introduction of diluent into the mixing pouch, and upon the rupturing of the fluid tight seal, the concentrate pouch and the mixing pouch will be in communication with each other, and the diluent and the base material can mix to form a solution in which the concentration of the base material will be at a second, lesser concentration than the first concentration.

11 Claims, 8 Drawing figures
Exemplary Claim Number: 1,4,11
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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MMIC	Draw Desc	Image
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☐ 5. Document ID: US 6193058 B1

L4: Entry 5 of 12

File: USPT

Feb 27, 2001

US-PAT-NO: 6193058

DOCUMENT-IDENTIFIER: US 6193058 B1

TITLE: System for dispensing premeasured quantities of concentrated materials

DATE-ISSUED: February 27, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yacko; R. Bruce	Toledo	OH		
Gayer; Jeffrey C.	Sylvania	OH		
Mueller; Edward L.	Toledo	OH		
Wiegand; John A.	Sylvania	OH		

US-CL-CURRENT: 206/222; 206/459.5, 206/524.7, 383/37

ABSTRACT:

A liquid dispensing bag has a sealed concentrate pouch and a mixing pouch, the

concentrate pouch having a fluid tight seal separating the concentrate pouch from the mixing pouch, and the concentrate pouch containing a base material at a first concentration. Upon the introduction of diluent into the mixing pouch, and upon the rupturing of the fluid tight seal, the concentrate pouch and the mixing pouch will be in communication with each other, and the diluent and the base material can mix to form a solution in which the concentration of the base material will be at a second, lesser concentration than the first concentration.

24 Claims, 8 Drawing figures
Exemplary Claim Number: 1,16
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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FORM	Draw Desc	Image
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☐ 6. Document ID: US 5343907 A

L4: Entry 6 of 12

File: USPT

Sep 6, 1994

US-PAT-NO: 5343907
DOCUMENT-IDENTIFIER: US 5343907 A

TITLE: Cleaning device for beverage dispensing systems

DATE-ISSUED: September 6, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wagner; Ewald	5403 Mulheim-Karlich 1,			DE

US-CL-CURRENT: 141/89; 134/104.1, 134/166C, 137/112, 137/240, 141/90

ABSTRACT:

A cleaning device for beverage drafting and dispensing systems, especially dispensing systems for carbonated beverages such as sodas, colas and fruit juices, as well as beer, utilizes primarily water and a liquid chemical cleaning agent which can be induced into the drafting lines from a storage container, and from which it can be removed again after a prescribed settling time. The system includes a hydraulically controlled change valve, controlled via three solenoid valves, pressurized with tap water and enclosed in a valve housing which contains a hydraulically movable piston which, in the operating "tapping" position, provides the first flow. Such flow is intended for the beverage. On the lower part of the valve housing, the beverage container adaptor equipped with a check valve is connected and on the upper part of the housing, a line connection is made with the beverage line leading to the tapping cock. This connection through the device is accomplished by a channel surrounding the piston in the tapping position.

20 Claims, 7 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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FORM	Draw Desc	Image
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☐ 7. Document ID: US 5069291 A

L4: Entry 7 of 12

File: USPT

Dec 3, 1991

US-PAT-NO: 5069291
DOCUMENT-IDENTIFIER: US 5069291 A

TITLE: Method and apparatus for suppressing explosions and fires and preventing reignition thereof

DATE-ISSUED: December 3, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
O'Connell; Michael O.	Ballineem, County Cork			IE

US-CL-CURRENT: 169/66; 137/68.11, 137/68.25, 169/20, 169/58, 169/71, 169/8, 222/146.5, 239/309

ABSTRACT:

Apparatus for suppressing explosions comprises a reservoir containing hot pressurized water which is heated by a heater. On explosion conditions occurring in an enclosure a high speed differential pressure diaphragm is fractured to release a charge of hot pressurized water into the enclosure. When the water enters the enclosure portion it is converted into water droplets to suppress the flame front of a deflagration and a portion of the water flashes off as flash steam to reduce the oxygen concentration and suppress the explosion. A differential pressure diaphragm 40 comprises a pair of bursting diaphragms having a space therebetween which is maintained at a balance pressure. When explosion conditions occur the balance is disturbed and the diaphragms burst under the higher pressure.

5 Claims, 11 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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PMC	Draw Desc	Image
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☐ 8. Document ID: US 5067616 A

L4: Entry 8 of 12

File: USPT

Nov 26, 1991

US-PAT-NO: 5067616

DOCUMENT-IDENTIFIER: US 5067616 A

TITLE: Methods of discriminating between contaminated and uncontaminated containers

DATE-ISSUED: November 26, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Plester; George	Essen			DE
Leddon; Warren E.	Dunwoody	GA		
Dalsis; David E.	Marietta	GA		

US-CL-CURRENT: 209/3.1; 209/523, 209/556, 209/564, 209/567, 209/571, 209/580, 209/589, 73/61.43, 73/61.48, 73/863.91

ABSTRACT:

Methods of discriminating between contaminated and uncontaminated containers prior to washing is disclosed characterized by the testing of the residue of the container to determine if the residue is residue of the original product packed in the container. If the residue is not sufficiently similar to the original product, the container is rejected as contaminated.

32 Claims, 6 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 9. Document ID: US 4986366 A

L4: Entry 9 of 12

File: USPT

Jan 22, 1991

US-PAT-NO: 4986366

DOCUMENT-IDENTIFIER: US 4986366 A

TITLE: Method and apparatus for suppressing explosions and fires

DATE-ISSUED: January 22, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
O'Connell; Michael O.	Ballineem, County Cork			IE

US-CL-CURRENT: 169/66; 137/68.13, 137/68.23, 169/20, 169/26, 169/58, 169/71, 169/8

ABSTRACT:

Apparatus for suppressing explosions comprises a reservoir means containing hot pressurized water which is heated by a heating means. On explosion conditions occurring in an enclosure a high speed differential pressure diaphragm is fractured to release a charge of hot pressurised water into the enclosure. When the water enters the enclosure portion it is converted into water droplets to suppress the flame front of a deflagration and portion of the water flashes off as flash steam to reduce the oxygen concentration and suppress the explosion. A differential pressure diaphragm 40 comprises a pair of bursting diaphragms having a space therebetween which is maintained at a balance pressure. When explosion conditions occur the balance is disturbed and the diaphragms burst under the higher pressure.

19 Claims, 11 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 10. Document ID: US 4540444 A

L4: Entry 10 of 12

File: USPT

Sep 10, 1985

US-PAT-NO: 4540444

DOCUMENT-IDENTIFIER: US 4540444 A

TITLE: Aluminum cleaner and system

DATE-ISSUED: September 10, 1985

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kelly; Timm L.	Oreland	PA		

US-CL-CURRENT: 134/3; 134/29, 134/40

ABSTRACT:

Processes and alkaline cleaning compositions for cleaning aluminum containers to prevent off-flavor and off-taste in liquid comestible products with which the containers are filled. The processes involve the use of an aqueous alkaline cleaning solution having the following compositions:

	Ingredient	Quantity, g/l
	1. Alkali metal or ammonium carbonate	0.1-0.9
2. Alkali metal or ammonium tripolyphosphate (anhydrous)		0.6-7.6
3. Alkali metal or ammonium tetraborate 0.5-6.3 (pentahydrate)		
4. Alkali metal or ammonium metasilicate 0.1-0.8 (anhydrous)		
5. Tri(alkali metal or ammonium)phosphate 0.4-5.4 (anhydrous)		
6. Alkali metal or ammonium gluconate or 0.1-1.3 glucoheptonate		
7. Surfactant		0.02-0.27

6 Claims, 0 Drawing figures
Exemplary Claim Number: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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DILUTIONS	35838
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L5: Entry 1 of 2

File: USPT

Sep 6, 1994

US-PAT-NO: 5343907

DOCUMENT-IDENTIFIER: US 5343907 A

TITLE: Cleaning device for beverage dispensing systems

DATE-ISSUED: September 6, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wagner; Ewald	5403 Mulheim-Karlich 1,			DE

US-CL-CURRENT: 141/89; 134/104.1, 134/166C, 137/112, 137/240, 141/90

ABSTRACT:

A cleaning device for beverage drafting and dispensing systems, especially dispensing systems for carbonated beverages such as sodas, colas and fruit juices, as well as beer, utilizes primarily water and a liquid chemical cleaning agent which can be induced into the drafting lines from a storage container, and from which it can be removed again after a prescribed settling time. The system includes a hydraulically controlled change valve, controlled via three solenoid valves, pressurized with tap water and enclosed in a valve housing which contains a hydraulically movable piston which, in the operating "tapping" position, provides the first flow. Such flow is intended for the beverage. On the lower part of the valve housing, the beverage container adaptor equipped with a check valve is connected and on the upper part of the housing, a line connection is made with the beverage line leading to the tapping cock. This connection through the device is accomplished by a channel surrounding the piston in the tapping position.

20 Claims, 7 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 2. Document ID: US 4540444 A

L5: Entry 2 of 2

File: USPT

Sep 10, 1985

US-PAT-NO: 4540444

DOCUMENT-IDENTIFIER: US 4540444 A

TITLE: Aluminum cleaner and system

DATE-ISSUED: September 10, 1985

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kelly; Timm L.	Oreland	PA		

US-CL-CURRENT: 134/3; 134/29, 134/40

ABSTRACT:

Processes and alkaline cleaning compositions for cleaning aluminum containers to prevent off-flavor and off-taste in liquid comestible products with which the containers are filled. The processes involve the use of an aqueous alkaline cleaning solution having the following compositions:

	Ingredient	Quantity, g/l
	1. Alkali metal or ammonium carbonate	0.1-0.9
Alkali metal or ammonium tripoly-	0.6-7.6 phosphate (anhydrous)	3. Alkali metal or ammonium tetraborate 0.5-6.3 (pentahydrate)
0.1-0.8 (anhydrous)	5. Tri(alkali metal or ammonium)phosphate 0.4-5.4 (anhydrous)	6. Alkali metal or ammonium gluconate or 0.1-1.3 glucoheptonate
	7. Surfactant	0.02-0.27

6 Claims, 0 Drawing figures
Exemplary Claim Number: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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"134/102.3"	138
"134/103.1"	243
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